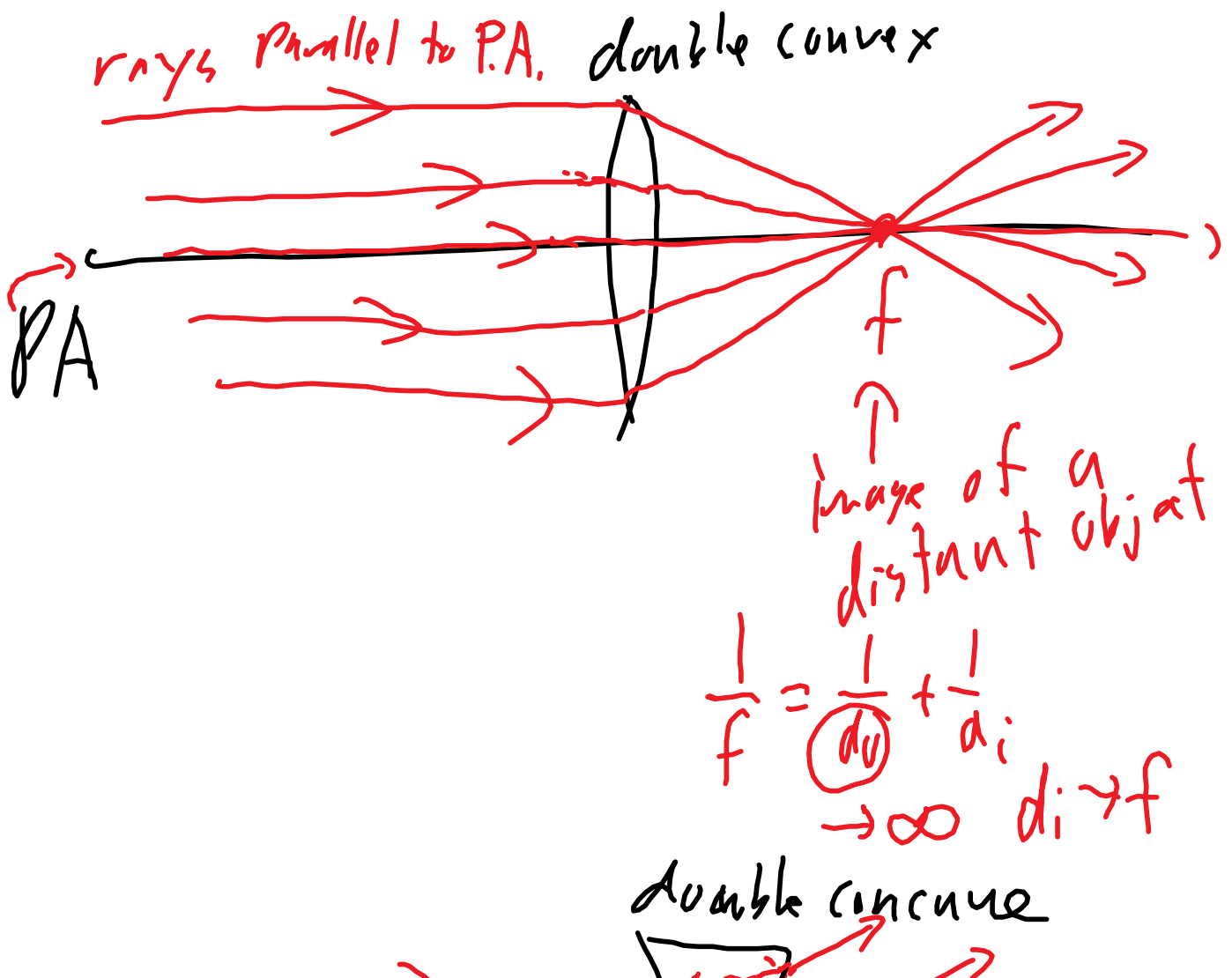


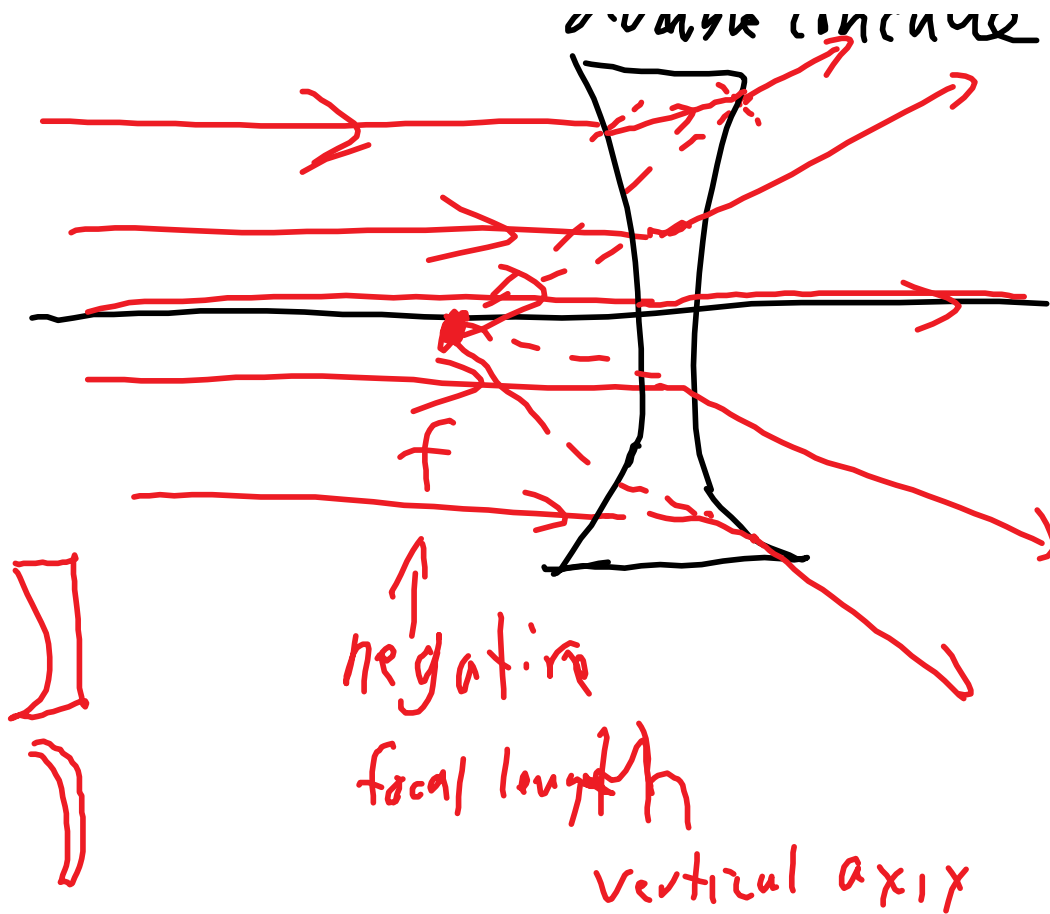
Lenses

Same as mirrors but
convex lens is converging (like concave mirror)

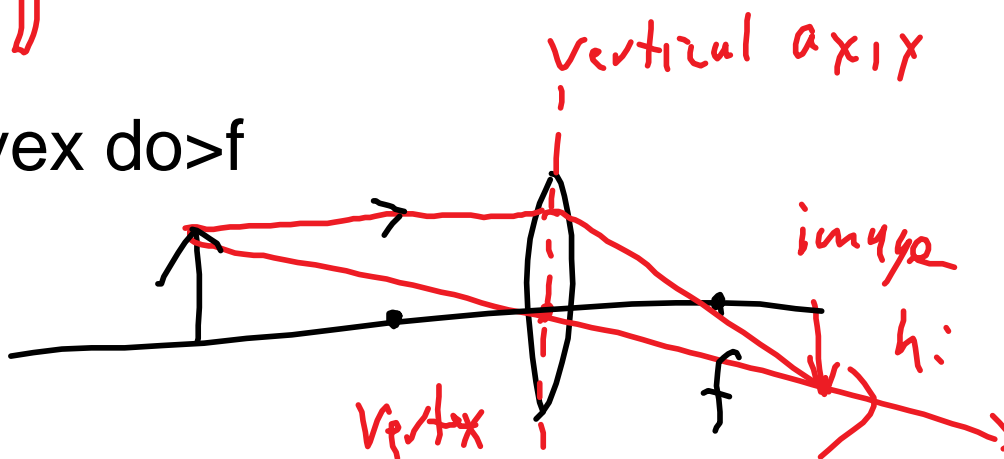
concave lens is diverging (like convex mirror)

Rays through the vertex (middle of the lens) go straight through

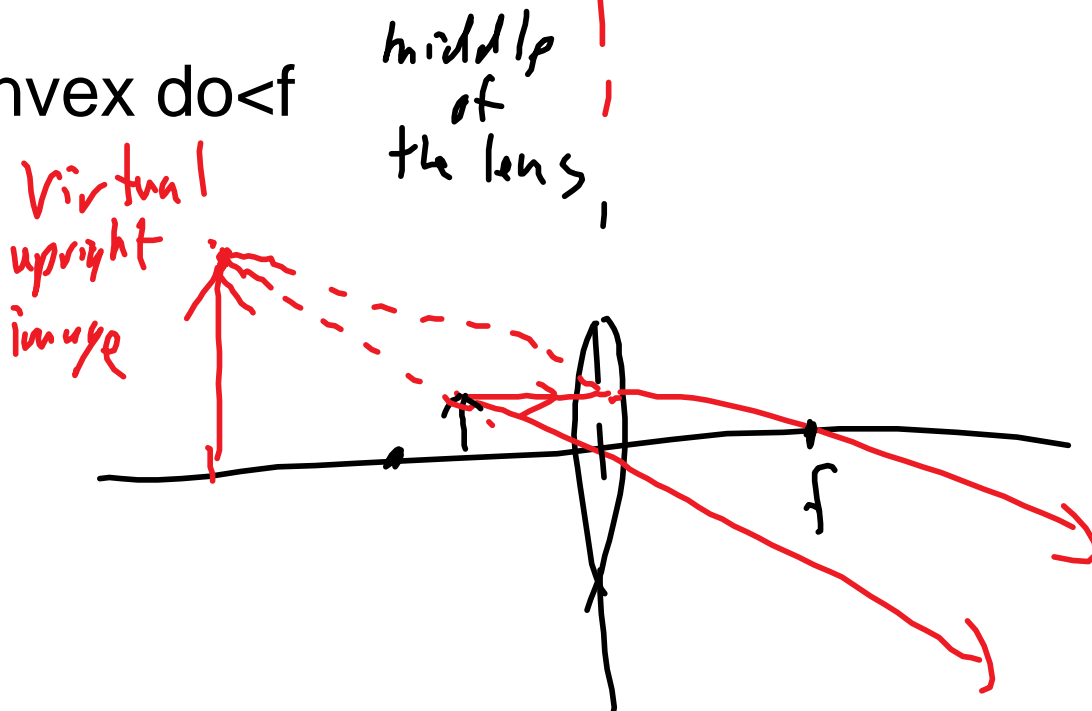




convex $do > f$

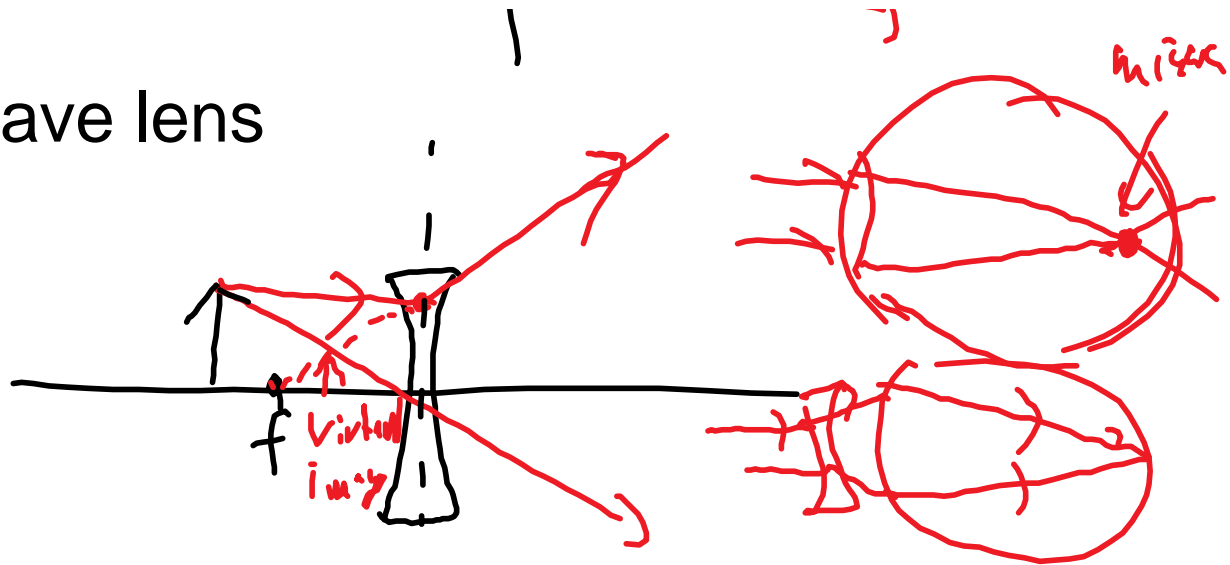


convex $do < f$



mirror

concave lens



eg. A 4.0 cm eraser is in front of a lens.
Determine the size and location of the image if

- the eraser is 5.0 cm from a convex lens focal length 3.0 cm
- the eraser is 5.0 cm from a convex lens focal length 8.0 cm
- the eraser is 5.0 cm from a concave lens focal length 8.0 cm

solve using a scale ray diagram and the equations

$$1/f = 1/d_o + 1/d_i \quad m = h_i/h_o = -d_i/d_o$$

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